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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,335	10/23/2001	Hiroyuki Fukada	214935US2PCT	6475

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
AMINZAY, SHAIMA Q	
ART UNIT	**PAPER NUMBER**
2684	12

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/926,335	FUKADA, HIROYUKI	
	Examiner	Art Unit	
	Shaima Q. Aminzay	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Argument

◆ Applicant's arguments filed 6/08/2004 have been fully considered but they are not persuasive.

1. In the remarks the applicant argued in substance:

(A) In page 6, lines 1-4, "inter alia, ...demodulators with a phase difference..." and lines 6-18, "As agreed during the interview,... Nowhere does ...demodulators with a phase difference...."

In response to argument (A), the examiner points to paragraph [0032], lines 9-15, middle portion of claim 1, "a synthesizer for synthesizing signals outputted from the plurality of demodulators with a phase difference in each multipath being maintained"

Up on further consideration as it was discussed in the interview the examiner agreed to revisit the reference and would like to point out that the reference, Ogino infect teaches "demodulators with a phase difference", in paragraph [0032], lines 9-26 ("...detects peaks of each propagation component of differing delay time...") therefor, the rejection with respect to claim 1 is maintained. Independent claim 11 includes features similar to

those in claim 1, claims 2 and 9 are depend from claim 1 therefor, the rejection with respect claims 2, 9, and 11 are maintained.

2. Applicant's arguments with respect to claims 3-6, 8-10, and 12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

◆ The following is a quotation of the appropriate paragraphs of 35 U.S.C.102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (a) The invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claim 1-2, 9, and 11 are rejected under 35 U.S.C. 102(a) as being anticipated by Tooru Ogino International Publication Number WO 00/02338.

4. Regarding claim 1, and 11, Ogino teaches a fading pitch detection comprising (Figure 6): a plurality of demodulators (102), connected to a shared reception system (104,and 112 for fading pitch; 104, and 106 for speech reception), each for demodulating a reception signal through each multipath (paragraph [0032], lines 9-13); a synthesizer (104) for synthesizing signals outputted from the plurality of demodulators with a phase difference in each multipath being maintained (paragraph [0032], lines 9-33); and a fading

pitch detector (112) for detecting a fading pitch based upon an output signal from the synthesizer (paragraph [0032], lines 23-26, and further see for example, paragraphs [0016], [0020], and [0035]).

5. Regarding claim 2, Ogino teaches claim 1, and further, teaches that the fading pitch detection is designed for a CDMA system (paragraph [0022], lines 1-4; paragraph [0025], lines 1-2), and the plurality of demodulators is a plurality of despreading devices (paragraph [0025], lines 1-10), connected to the shared reception system for performing despreading for each multipath (paragraph [0025], lines 6-19).

6. Regarding claim 9, Ogino teaches claim 1, and further teaches a mobile information terminal comprising the fading pitch detection (paragraph [0013], lines 1-5; paragraph [0020], lines 1-5; paragraph [0023], lines 1-5).

Claim Rejections - 35 USC § 103

◆ The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3-8, 10, and 12 are rejected under 35 U.S.C.103(a) as being unpatentable over Tooru Ogino International Publication Number WO 00/02338 in view of Kaku U. S. Patent 5812593.

8. Regarding claims 3, 7, and 12, Ogino teaches a fading pitch detection apparatus (Figure 6, element 112), and the fading pitch (112) transforming an input signal including the fading-based variation to an electrical signal and calculating the value of an output signal (see for example, paragraph [0035], lines 9-16; [0038], lines 1-15; [0043], lines 1-5), and estimating the fading pitch value (see for example, paragraph [0035], lines 16-30, [0051], lines 7-10, and paragraph [0070], lines 1-11), and measurement at predetermined threshold interval (see for example, paragraph [0024], lines 1-13, [0028], lines 5-10, [0041], lines 31-38, and [0051], lines 1-7)

However, Ogino does not teach an auto-correlation detect, and calculating values with comparison result between the auto-correlated value and a predetermined threshold value.

Kaku teaches an auto-correlation detect (see for example, column 4, lines 42-44, column 9, lines 1-10, auto-correlation detection and calculation), and calculating values with comparison result between the auto-correlated value and a predetermined threshold value (see for example, column 4, lines 1-36).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Kaku's auto-correlation detect with Ogino's fading pitch (see for example, Figure 6 paragraph [0032], [0043], [0044], electrical field intensity measurement (112)) to provide a reception "that can shorten the time of operation of an arrived radiowave search circuit in a mobile terminal that perform RAKE combining and thus reduce consumption

of current" (Ogino, paragraphs [0020], lines2-5), and to provide a system that finds the fading pitch to estimate the speed of mobile terminal to reduce power conception in extension of talk time (Ogino, paragraphs [0070], lines 1-11), and to provide a system with greatly reduced correlation results processing and "leading to a reduction in the overall power consumption of the receiver" (Kaku, column 9, lines 17-24).

9. Regarding claims 4, and 8, Ogino and Kaku teach claims 3, 7, and Ogino further teaches the controller (Figure 7, element 103) operates intermittently under the control of the fading pitch circuit (Figure 6, element 112, and paragraph [0041], lines 42-45) and the fading pitch estimation is calculated based upon the synthesizer (104) output time (seer for example, paragraph [0041], lines 45-45, and paragraph [0038], lines 1-15), and calculating the values based upon the minimum value of the time difference (seer for example, paragraph [0016], lines 14-21).

10. Regarding claim 5, Ogino and Kaku teach claim 4, and Ogino further teaches the fading pitch calculating in linear form (see for example, paragraph [0041], equation (1), and lines 19-30).

11. Regarding claim 6, Ogino and Kaku teach claim 3, and Ogino further teaches the fading pitch (112) transforming an input signal including the fading-based variation to an electrical signal and calculating the value of an output signal (paragraph [0035], lines 9-16; [0038], lines 1-15; [0043], lines 1-5), and estimating the fading pitch value (paragraph [0035], lines 16-30); a

synthesizer (104) for synthesizing signals outputted from the plurality of demodulators with a phase difference in each multipath being maintained (paragraph [0032], lines 9-15); and a fading pitch detector (112) for detecting a fading pitch based upon an output signal from the synthesizer (paragraph [0032], lines 23-26).

12. Regarding claim 10, Ogino and Kaku teach claim 7, and Ogino further teaches a mobile information terminal comprising the fading pitch detection (paragraph [0013], lines 1-5; paragraph [0020], lines 1-5; paragraph [0023], lines 1-5).

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 form.

Inquiry

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 703-305-8723. The examiner can normally be reached on 7:00 AM -5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shaima Q. Aminzay
(Examiner)

August 28, 2004

NICK CORSARO
PRIMARY EXAMINER

Nay Maung
(SPE)
Art Unit 2684